

Ohio Environmental Protection Agency-Division of Surface Water
2014 Surface Water Improvement Fund Grant Application

STATEWIDE

Part One: Project Sponsor Information

Sponsoring Organization	City of Cleveland Heights		
Mailing Address	40 Severance Circle		
City, State, Zip Code	Cleveland Heights, OH 44118		
Telephone	216 291-4868	FAX	216 291-3761
Dun & Bradstreet 9-digit number	34-6000688	Congressional District	11th
Federal Tax ID			
Project Representative Name & Title	Richard Wong, Director of Planning and Development		
Telephone	216 291-4868		
Email Address	rwong@clvhts.com		
PROJECT TITLE	Cedar Lee Streetscape: Innovative Stormwater Demonstration		
Project Location Identify the county and township(s) where project site is located	Lee Road between Dellwood Road and Superior Road, Cuyahoga County		
Name of the Project Watershed	Dugway Brook	Hydrologic Unit Code	041100030504
IS PROJECT IN LAKE ERIE WATERSHED (circle yes or no)	Yes	No	
Estimated Project Start Date	April, 2015	Completion Date	October, 2015
Sponsor Authorization	To the best of my knowledge and belief all data and information contained in this project application are true, current and correct. The application package is duly authorized by the sponsoring organization as certified by the following:		
Name, Title of Authorized Official	Richard Wong, Director of Planning and Development		
Signature of Authorized Official		Date	April 9, 2014

CEDAR LEE WORK PLAN

INNOVATIVE STORMWATER DEMONSTRATION PROJECT



INTRODUCTION

Cleveland Heights, Ohio - A diverse, progressive, vital suburb of Cleveland with 46,000 residents, in an ideal location - just twenty minutes from downtown and very close to University Circle, Cleveland's cultural center.

The city has 135 acres of beautiful parkland and fine recreation facilities, and year-round activities for all ages. In Cleveland Heights, you'll find excellent educational opportunities, unique neighborhood commercial districts, and great neighbors.

COMMERCIAL DISTRICTS

Cleveland Heights commercial districts are integral to the fabric of the neighborhood. Their distinctive merchant mix, social vitality and intimacy provide what many call a “Main Street” character. With seamless transitions from residential to commercial areas, the districts reinforce the unmistakable character and social vitality of our neighborhoods. In the commercial districts, we meet our neighbors and forge new friendships. At their best, these commercial districts reflect the unique people who call our city home.

The Cedar Lee commercial district was established early in the 20th century, before the automobile attained dominance. Since most people didn't own cars, it was ideal shopping for the residents of the nearby neighborhoods. These circumstances gave Lee Road its character:

- One and Two Story mixed-use buildings
- Continuous storefronts
- Human scale and pedestrian orientation
- Curbside and off-street parking in back

The sidewalks are always used along Lee Road from Dellwood to Superior Roads. Walkable, bike-friendly residential side streets form a compact street and sidewalk grid that conveniently connects

Part Two: Detailed Project Work Plan (continued from previous page)

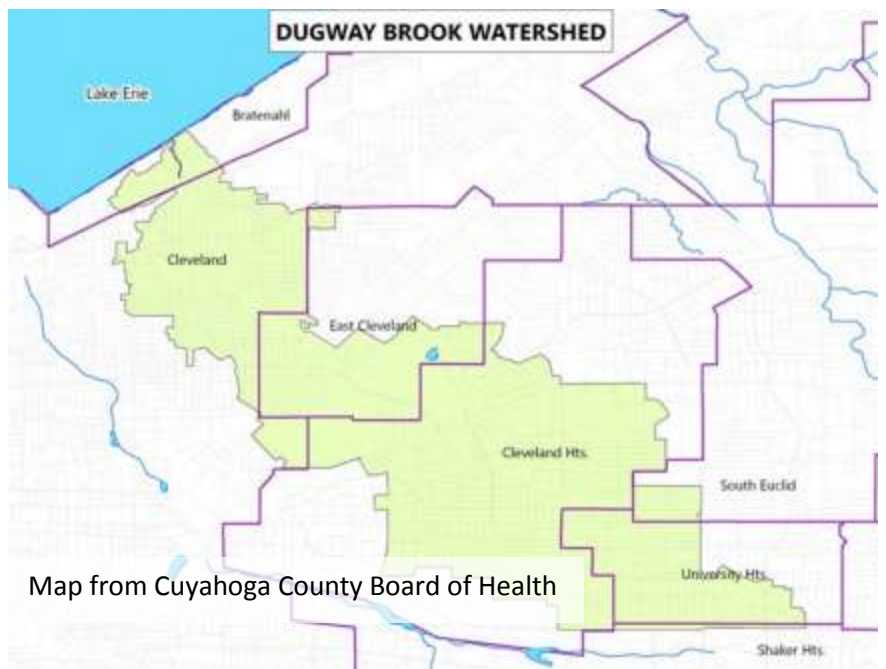
homes and apartments to nearby businesses and institutions. This district is at the midpoint of the #40 bus line on Lee running through Cleveland Heights, Cleveland, East Cleveland, Shaker Heights, Warrensville Heights, Maple Heights and Bedford. 777,094 rides on the #40 occurred in 2013.

The Cedar Lee Special Improvement District's property owners raise \$140,000 each year for landscaping, maintenance, promotions, and special projects that complement basic city services. In 2008 the City and this business organization with the help of urban designers and architects of a company called Studio Techne prepared an improvement plan for the district's future. During that process, the city and stakeholders realized that Lee Road's infrastructure could be an important part of a much more ecologically sustainable future. The proposed streetscape project promotes sustainable transportation, giving people an attractive, comfortable walking environment. While parking is provided for the various regional attractions, additional traffic calming measures and pedestrian friendly engineering practices will allow motorists and pedestrians to safely and comfortably coexist.

PROPOSED INNOVATIVE STORMWATER DEMONSTRATION

In addition to encouraging non-polluting and healthful transportation on foot and by bicycle, the civil engineers and design architects analyzed stormwater induced flooding. The study area is well-known for standing water on Lee Road at Tullamore Road during most rainfall events and taking action is overdue. Our project begins uphill from Tullamore Rd at the aptly named Meadowbrook Boulevard. Meadowbrook is a winding roadway named for the culverted brook below. This area has potential to capture 0.675 million gallons of stormwater annually. Bioswales and permeable pavement will conspicuously intercept runoff before it reaches the low point at Tullamore. The water, instead of forming standing water at Tullamore, will feed water loving, native perennials, ornamental grasses and trees in bioswales from Meadowbrook to Tullamore.

The drainage in this area is part of the Dugway Brook Watershed, which includes drainage from University Heights, South Euclid, Cleveland Heights, East Cleveland, Cleveland, and Bratenahl. The total catchment area for this storm sewer low spot includes the space between Cedar Rd, Taylor Rd, Dellwood Rd, and Lee Rd. Buildings and pavement contribute 62 million gallons of runoff to the Dugway. This SWIF demonstration project will inspire further green stormwater infrastructure installations throughout this neighborhood, eventually capturing nearly all 62 million gallons before it enters the storm sewer.



Part Two: Detailed Project Work Plan (continued from previous pages)

It is significant that Cleveland Heights City Council in 2013 passed legislation to permit homeowners to disconnect their downspouts. Allowing residents upstream of Lee Road to keep rain water for their lawn, trees, gardens and ornamental plants was a crucial step toward reduction of piped storm water runoff into the Dugway. The City intends on promoting this as a feature of sustainability that every homeowner can enjoy at minimal cost.

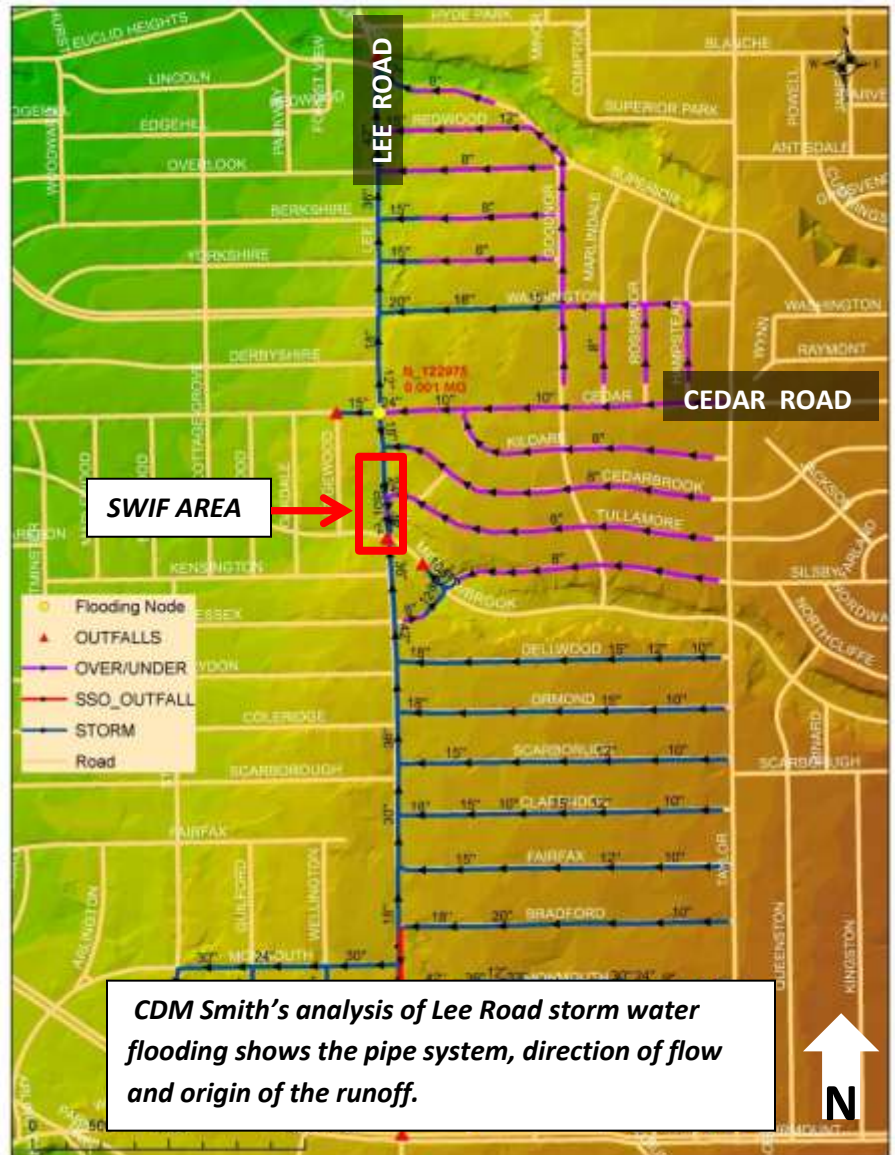
Instructional signs will be placed along the sidewalk to highlight the ecological benefits and raise awareness of the Dugway Brook Watershed. All work will be in public right-of-way and on private property that has historically served as an extension of the public's domain since the 1920s when Lee Road was first developed.

Few people who live, work or patronize the district are aware of water quality issues associated with urbanized areas. People don't realize that their tap water comes from cleansed water piped from an intake in Lake Erie that is supplied in-part from this waterway. Dugway Brook's

To underscore the potential audience that will see this project, a list of 2013 attendance was prepared for the anchor institutions:

- Cleveland Heights University Heights High School: 500,000
- Cedar Lee Theater: 200,000
- Cain Park: 65,000
- Dobama Theater: 9500
- Cleveland Heights-University Heights Main Library 600,000

The intention is to affect these visitors, employees, patrons, residents and students so they develop an appreciation and awareness about water quality issues that have been largely buried.



Part Two: Detailed Project Work Plan (continued from previous pages)

The SWIF funded project is part of a comprehensive street improvement project. In 2011, the City successfully applied for \$1.5 million in Transportation Alternatives Program funds. \$150,000 of preliminary engineering was jointly funded by the City and Cedar Lee Special Improvement District and an engineer was hired following an interview process. In 2013, Cuyahoga County's Department of Public Works awarded \$1.6 million for repaving Lee Road and installing new traffic signals. \$275,000 has been committed by the City for final engineering of the Federal and County work so that bidding and construction can occur in the spring of 2015. The SWIF work would occur during 2015 with plants installed in the fall, weather permitting, or the spring of 2016, if weather or unforeseen delays occur.

Dr. Hannah Mathers from the Ohio State University Department of Horticulture and Crop Science with support from the local extension office personnel has agreed to furnish trees for the streetscape as part of a long-term Woodlands in Urban Environments (RWUE) study. Best practices for trees in a built-up commercial area will include improved tree production practices, pre- and post- plant methodologies, high planting densities with small, vigorous trees and judicious species selection for increased transplant survival. Improving the vitality, density and longevity of Lee Road's tree canopy will diminish combustion engine pollution and storm-water runoff while increasing carbon sequestration and improving storm-water quality.

Watershed benefits of urban reforestation include increasing the capacity and infiltration rate of soil near root growth, soil erosion reduction by leaves reducing the kinetic energy of raindrops, and leaf transpiration further increasing the soil's water storage capacity. As the trees mature, they increasingly will control runoff at the source by intercepting and storing rainfall, reducing runoff volume, as well as delaying the onset of peak flows.

Meetings between the City and OSU staff will be coordinated so that Cleveland Heights-University Heights High School's Environmental Club can participate and offer their time, wisdom and energy. Club organizer Steven Warner, a science teacher at the high school, has pledged the club's full support. They will receive updates on the storm water improvements as the design is finalized and bid. During construction, they will take water quality samples of the street runoff and downstream from various bioswales through drainage overflow grates that afford access to the runoff after it has passed through plant roots, soil, and sand. Using their water quality testing equipment they will analyze the effect of the bioswales. A presentation to the Cedar Lee Special Improvement District and City staff is anticipated after they have completed their analysis.

The students' candid impressions of the project's proposed public information signs will be solicited while the signs are in draft form. The City wants to make sure the graphics and text convey a relevant and provocative message to young adults from Heights High. The goal is to make people aware that the water running into Lee Road's catch basins ends up in Lake Erie, the origin of our tap water.

Recommendations for post-construction modifications will be discussed during follow-up meetings with the civil engineers and architects. Plants may need to be replaced by more hardy or better looking species. Erosion-preventing stone elements will probably need minor adjustments after a season, too. The City and Cedar Lee SID will make sure the project performs as intended.

Maintenance of the streetscape, including permeable pavers and bioswales, are the Cedar Lee Special Improvement District's responsibility. They will water, weed and care for the bioswale plants and trees. Care instructions will be provided by Dr. Mathers and the local OSU Extension staff. As the trees mature, the City's Forestry crews will prune tree limbs on an as-needed basis.

Part Two: Detailed Project Work Plan (continued from previous pages)

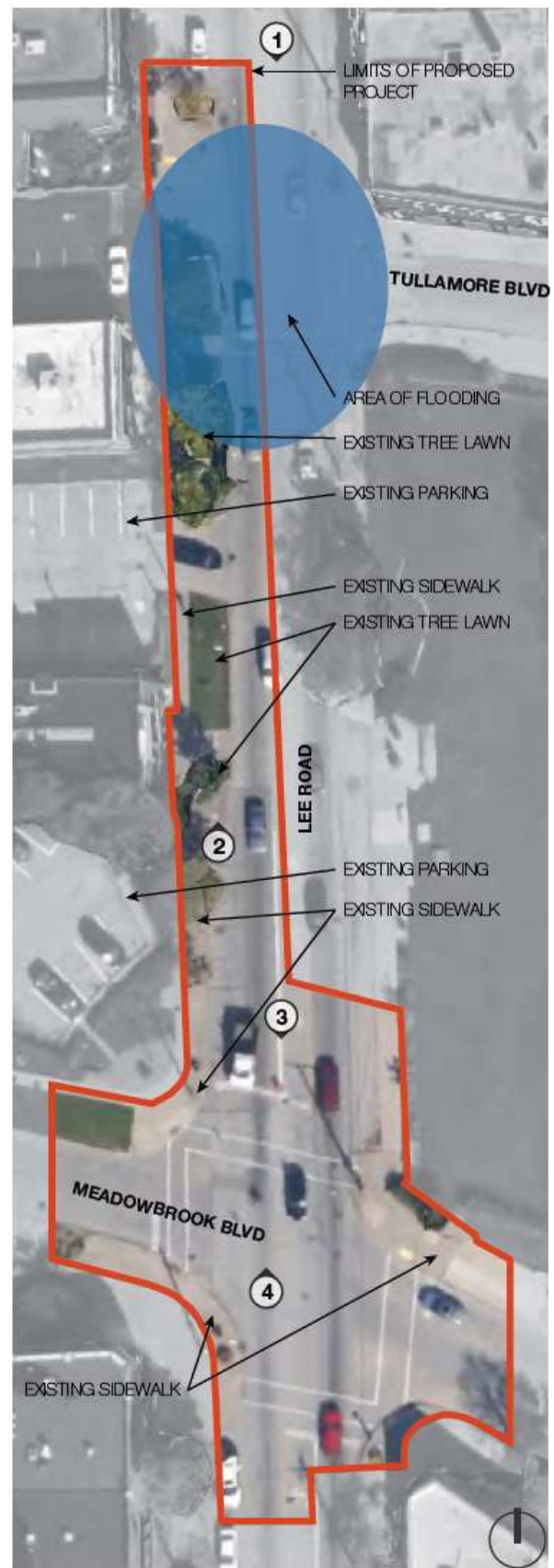
Outreach will be primarily through updates and articles on websites and email blasts from the City, the Cedar Lee Special Improvement District, the School District, and a citizen-run local paper called the *Heights Observer*. A quarterly City newsletter called *Focus* will provide updates and press releases will be sent to the *Cleveland Plain Dealer* and *Sun Press*.

Measuring the water quality success of the SWIF project will be evaluated by the ability of pavers and bioswales to catch and clean Lee Road runoff before the water reaches Dugway Brook. Visual observations will demonstrate if the water is being channeled as envisioned. Monitoring bioswales and permeable pavement during rainfall is the best way to observe performance. Multiple observations each month will be performed by City Planning staff to make sure the project is functioning. Regarding public awareness, the number of outreach activities will be documented. Illustrations and a summary are on the next three pages.

PROJECT WORK PLAN | EXISTING CONDITIONS

EXISTING CONDITIONS

The commercial district exists as a pedestrian oriented Main Street commercial district. Places include restaurants, schools, libraries, theaters, and independent retail shops. The district is dominated by asphalt paving for both streets and parking lots and concrete sidewalks. Tree lawns exist however, the soil compaction and grass cover provide little opportunity to capture storm runoff. During periods of moderate rain, the intersection of Lee and Tullamore Floods making safe pedestrian crossing difficult if not impossible.



PROPOSED PROJECT WORK PLAN | STUDY AREA

PROPOSAL

The main goal is to address uncontrolled runoff from sidewalks, parking lots and the street through innovative storm water practices in order alleviate the flooding that occurs at the intersection of Lee and Tullamore. The fundamental technique utilized will be to reduce the amount of permeable surface, and to convert the tree lawn areas into rain garden and water retention areas. This is a very populous and active area drawing people from multiple communities to the district, this project has the opportunity to educate and raise public awareness of innovative storm water practices. Additionally partnership with Ohio State University and the Cleveland Heights High Sustainability Club allows the implemented strategies to be studied and become part of an educational process.

SUMMARY OF BENEFITS

Improve Quality and Reduce Stormwater Run-Off

- ◇ By Removing 3,000 sf of Impervious Surface
- ◇ By Constructing 20,900 cf of Rain Garden capable of storing 54,720 gal of storm water
- ◇ By Reducing Heat Island Effect through the Addition of Trees

EDUCATION | PUBLIC AWARENESS

Provide Education about Storm Water Issues

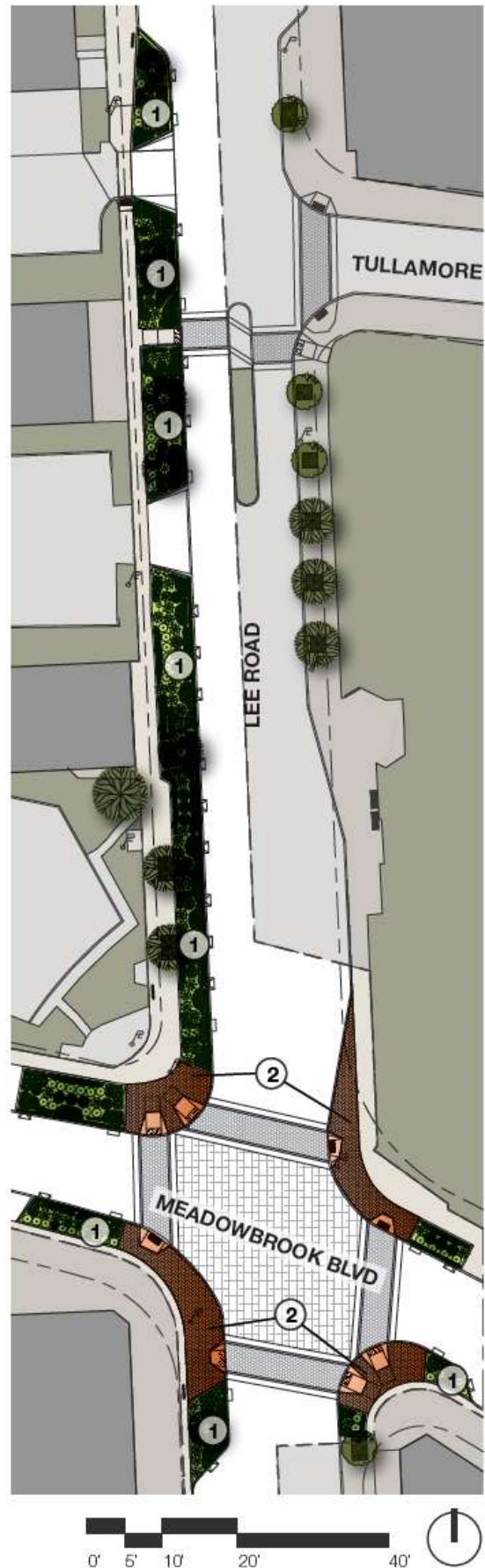
- ◇ By Providing Informational Signage
- ◇ Collaborating with The Ohio State University's Horticulture + Crop Science Department
- ◇ Engaging the Cleveland Heights High Environmental Club
- ◇ Providing Monitoring, Observation and Natural Studies of the Effects of the Project
- ◇ Project Progress + Updates on the City + S.I.D.'s Websites
- ◇ Publishing Articles in the Heights Observer + other Regional Publications
- ◇ Highlight the Project on the Local Access Cable Channel

Health + Safety Improvements

Improve Quality and Reduce Stormwater Run-Off

- ◇ Reduce the Incidence of Flooding at Lee + Tullamore
- ◇ Reduce Pollution + Contaminants entering Dugway Brook
- ◇ Improve Air Quality + Pollution through the planting of Trees
- ◇ Trees will Reduce the Heat Index of the adjacent Pavement

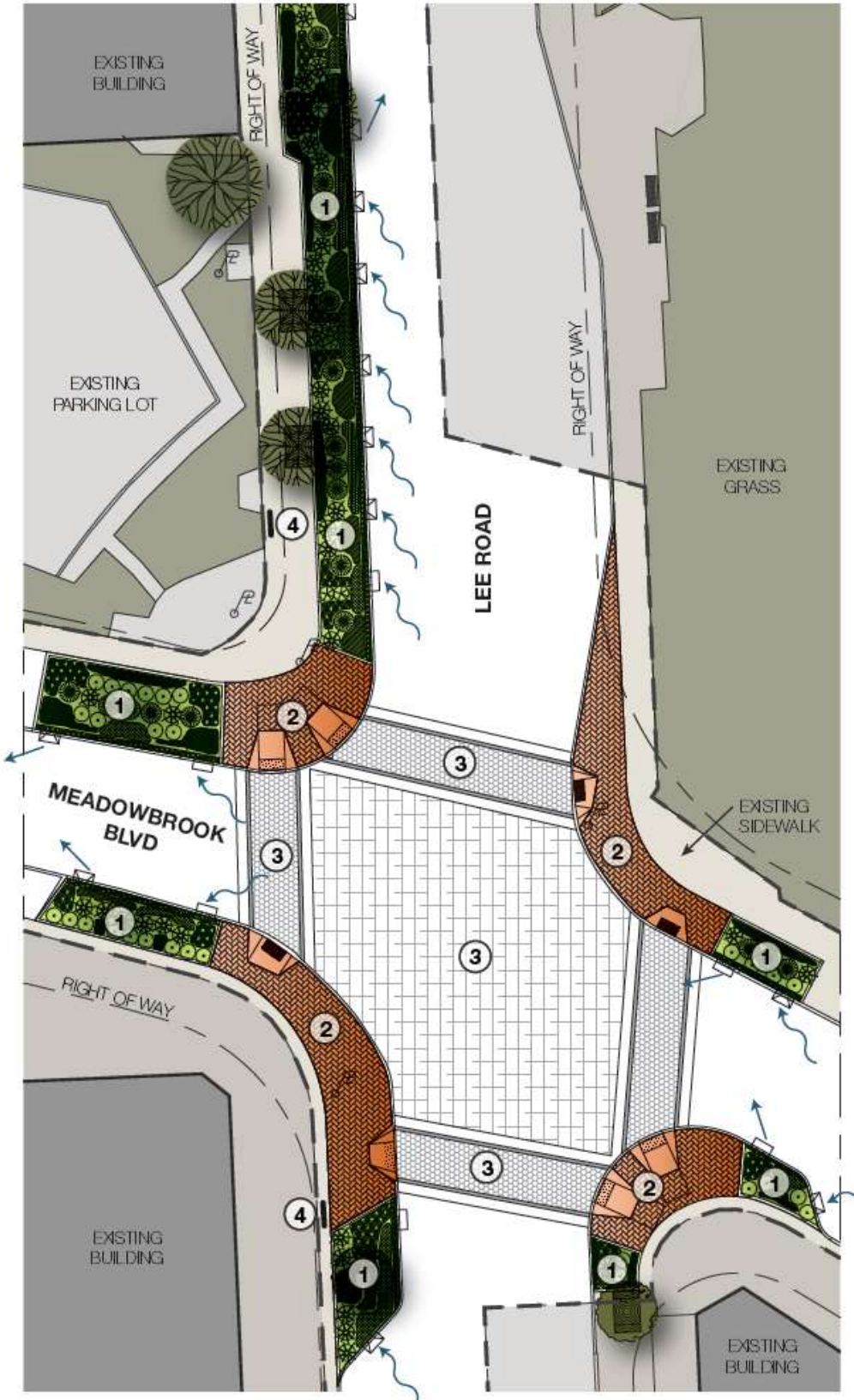
① RAIN GARDENS



PROPOSED PROJECT WORK PLAN | MEADOWBROOK + LEE INTERSECTION

LEGEND

- 1 RAINGARDEN
- 2 PERMEABLE PAVERS WITH DRAINABLE INTO RAINGARDEN
- 3 CROSSWALK AND INTERSECTION IMPROVEMENTS INCLUDED IN SEPARATE STREETSCAPE PROJECT
- 4 EDUCATIONAL SIGNAGE
- Wavy blue arrow: DIRECTION OF STORMWATER FLOW INTO RAINGARDEN
- Straight blue arrow: DIRECTION OF STORMWATER FLOW OUT OF RAINGARDEN
- Dashed line: AREA OF WORK INCLUDED IN SEPARATE STREETSCAPE PROJECT



Innovative Stormwater Management Demonstration Project Deliverables Worksheet

Project Sponsor:	City of Cleveland Heights
Project Title:	Cedar Lee Streetscape: Innovative Stormwater Demonstration

Directions: If you are requesting SWIF grant funding to complete a stormwater management demonstration project then you **MUST** complete the Stormwater Management Demonstration Project Deliverables Worksheet in addition to the detailed project workplan narrative included in Part Two of the SWIF application. Stormwater management demonstration projects using SWIF grant funds are most appropriate when demonstrating an innovative stormwater management practice in highly visible and publicly accessible sites within your community. For example, projects such as retrofitting small public parking lots with permeable pavement or installing large community rain gardens or vegetated infiltration areas are examples of projects that may qualify for SWIF funding. General Stormwater management projects and those required as part of an NPDES stormwater permit are NOT eligible for SWIF funding. **SWIF funds may NOT be used to install rain gardens, rain barrels or other practices on lands owned by private for-profit businesses.** Please include all project specific deliverables that will be produced as part of your project and the number of each item using the “deliverable units” listed below. If an item that will be produced is not included on the list, please use the “Other” category and specify the deliverable

Project Activity	Deliverables Associated with Proposed Project Activity	Deliverable Units	Expected Deliverable Units that will be Completed
Stormwater Management Demonstration Practices	Publish RFPs	RFPs	completed
	Execute -Planning or Design Contracts	Contracts	completed
	Develop Project Plans or Design Documents	Plans	Design underway
	Execute Construction-Contract(s)	Contract	1
	Install Permeable Pavement	Square Feet	1910
	Construct Bio-filtration Islands	Square Feet	4180
	Install Passive "Treatment Trains"	Systems	0
	Construct Stormwater Treatment Wetlands	Acres	0
	Install Rainwater Harvesting/Reuse Systems	Systems	0
	Install Large Community Rain Garden Demonstrations	Square Feet	0
	Install Vegetated Infiltration Areas	Square Feet	0
	Install Green Roof on Public Facilities	Square Feet	0
	Other: (specify)		
	Other: (specify)		
	Other: (specify)		
	Other (specify)		

Project Specific Outreach Deliverables Worksheet

!!!This Worksheet is REQUIRED for ALL applicants!!!

Project Sponsor:	City of Cleveland Heights
Project Title:	Cedar Lee Streetscape: Innovative Stormwater Demonstration

Directions: ALL applicants for Surface Water Improvement Project grants MUST complete a project specific outreach deliverable and timeline worksheet in addition to the detailed project workplan narrative included in Part Two of the SWIF application. Helping the public to become aware and informed about the benefits of your projects is a critical component of any successful water quality project. We recommend that all restoration and/or stormwater projects install project specific signs, construct informational kiosks (where applicable) and develop other items to inform the public of your project. Please include all project specific outreach deliverables that will be produced as part of your project and the number of each item using the “deliverable units” listed below. If an item that will be produced is not included on the list, please use the “Other” category and specify the deliverable.

Project Activity	Deliverables Associated with Proposed Project Activity	Deliverable Units	Expected Deliverable Units to be Completed
Project Specific Outreach	Develop Project Fact Sheets	Fact Sheets	1
	Conduct Public Meeting	Public Meetings	1
	Develop Press Releases	Press Releases	3
	Create/Maintain Websites	Website	1
	Install Project Signs	Signs	2
	Develop Displays	Displays	1
	Install Informational Kiosk	Kiosk	0
	Conduct Tours	Tours	3
	Conduct Tours via Canoe	Canoe Tours	0
	Conduct Stream Clean-Ups	Clean-Ups	0
	Conduct Field Days	Days	1
	Conduct Workshops	Workshops	0
	Develop Newsletters	Newsletters	0
	Other: High School Environmental Club study and presentation	Powerpoint presentation	1
	Other: Ohio State University ongoing tree evaluation	report	1
	Other: progress reports on Government Access Channel	Film clips	2
	Other (specify)		

Part Four – Project Grant Budget

In addition to the detailed project workplan completed in Part Two of this application, and the respective project deliverable worksheets completed in Part Three, ALL SWIF applicants must include a detailed project grant budget. In addition to the forms below, you must also include a Sub-contractual Worksheet if any of the activities proposed will be subcontracted to a third-party for completion. Please familiarize with the following budget categories prior to completing your project budget.

Budget Categories: the following budget categories are used to record project costs to be incurred directly by the grant sponsoring organization (applicant). Technical services such as engineering, legal etc., provided under a subcontract by partner organizations or a third-party must be included in the Sub-Contractual budget category. **PLEASE SEE THE SUB-CONTRACTUAL GUIDANCE SHEET FOR ADDITIONAL DETAILS on managing third-party costs and services.**

1. **PERSONNEL:** limited to salary costs only for employees of the grant sponsoring organization working directly on the project. These costs should be summarized when completing the budget form but must be justified in detail in the project workplan in Part Two. Salary costs must be justified by providing the number of hours that an employee will be working directly on the project multiplied by the hourly wage.
2. **FRINGE BENEFITS:** includes costs for such items as health, dental, life insurance, retirement and other standard benefits provided to employees of the grant sponsoring organization who are working on the project. **Fringe benefit costs reimbursed with SWIF grant funding must be for actual fringe expenses and may not exceed 30% of the hourly salary costs.**
3. **TRAVEL:** includes costs such as mileage, lodging and meals when traveling in-state on project-related business for employees of the sponsoring organization who are working on the project. **Travel costs may not exceed \$500 in SWIF funding and may NOT include out of state travel.**
4. **EQUIPMENT:** includes project specific durable items costing more than \$300 per unit. Equipment purchased with SWIF grant funds must be directly necessary to successfully complete the project. **(Items under \$300 are considered to be supplies)**
5. **SUPPLIES:** includes one-time use items that are necessary to complete the project or administer the grant. Examples include: office supplies, first-aid supplies, gloves, printer ink, toner cartridges and other supply costs that are proportionate to the type of project that is being conducted. **Reimbursement of supply costs for SWIF funded projects may not exceed \$500.**
6. **SUB-CONTRACTUAL:** this category is used to identify costs associated with services provided by third-parties and may include technical services such as engineering studies and project planning and design, construction services, grant management, fiscal services, project management, and others. **PLEASE SEE THE SUB-CONTRACTUAL GUIDANCE SHEET FOR ADDITIONAL DETAILS ON THE SUB-CONTRACTUAL BUDGET CATEGORY.** Sub-contractual costs may be summarized when completing the budget forms; however they must be justified in detail when completing the required SUB-CONTRACT WORKSHEET.
7. **COST-SHARE:** this category **must** be used whenever there is a cost-share agreement in place that splits the cost of implementation between grant funds and private landowner contributions. It is most often used in agricultural or home septic replacement projects where a local organization enters into a cost-share agreement with a farmer or landowner to implement a selected best management practice.
8. **OTHER:** includes project-specific costs for goods or non-technical services (such as printing or copying etc) that do not belong in the cost categories listed above. Examples include: film development, postage (for mailings directly related to the project), the cost of acquiring conservation easements and other miscellaneous items that are necessary and allocable to the project.
9. **INDIRECT COSTS:** Indirect costs are **NOT** eligible for Surface Water Improvement Grant funding.

Part Four (A) Project Grant Budget

Detailed Project Budget: All SWIF applicants must complete a detailed project grant budget using the form below.

Include a brief justification and itemized breakdown for the amount proposed in each budget category. Any budget category with an amount entered MUST include a justification/description. Please note: applicants requesting funds under the Subcontracts Category must also complete a SUBCONTRACT WORKSHEET.

Budget Category	Amount SWIF \$\$ Requested	Budget Justification and Description
Personnel (Applicants requesting personnel funds MUST complete and attach a Personnel Roster Worksheet).	0	\$150,000 in preliminary engineering and architectural fees were paid by the Cedar Lee Special Improvement District. \$275,000 in final engineering and architectural fees will be paid by the City as part of the streetscape project.
Fringe Benefits (Fringe costs may not exceed 30% of hourly salary costs)	0	
Travel (Travel costs may not exceed \$500. In-state travel ONLY is permitted).	0	Travel costs for OSU Professor Mathers will be paid by the Cedar Lee Special Improvement District.
Equipment (only durable items >than \$300)	0	
Supplies (total supply costs funded with SWIF grant funds may not exceed \$500)	0	
Subcontract (Any services provided by a third party. Applicants MUST complete and include a detailed subcontract worksheet).	\$129,623	These funds pay for the bioswales and permeable pavers.
Other	0	
Cost Share (must be used whenever cost-share is used for Agricultural projects).	0	
TOTAL	\$129,263	The total grant request may not exceed \$150,000. Due to limited fund availability, applicants are encouraged to apply for considerably less than the maximum.

Surface Water Improvement Project Grants

Part Four (B): Personnel Roster Worksheet

This form MUST be completed whenever grant funds are requested for salary and fringe benefit costs only for those employees of the grant sponsoring organization working on the project.

Employee Title	# of Hours	Hourly Wage	Total Salary Costs	Fringe Rate/Hour	Total Fringe Costs	Role/Description of Tasks and Responsibilities
No City employee costs are requested from the SWIF funds.						

Surface Water Improvement Project Grants 2014

Part Four (C): SUB-CONTRACTUAL Worksheet

A separate sub-contractual worksheet must be completed when any part of a proposed project will be prepared or produced by a party OTHER than the grant sponsoring organization.

Project Sponsor	City of Cleveland Heights			
PROJECT Title	Cedar Lee Streetscape: Innovative Stormwater Demonstration			
Deliverable	# of Units to be Completed (such as hours of service)	\$\$ Cost per Unit	Total Est. \$\$ Costs	Description
Permeable Pavement	1910 square feet	19.50	37,245	Meadowbrook- Lee intersection treatment at all four corners
Bioswale	1098 square feet	22.10	24,266	
Bioswale	3082 square feet	22.10	68,112	
Total Sub-Contracting Costs Associated with this Project			129,623	

Please NOTE: Briefly describe the process that will be employed by the grant sponsoring organization when selecting sub-contractors (use additional space if necessary):

The project will be constructed by a contractor and his or her subcontractors. The team will be selected using a publicly advertised and competitive bidding process approved by ODOT and the City.